

EE / CprE / SE 491 – sdmay19-01

Athlete Motion Tracking

Week 6 Report

2/28/19 – 3/6/19

Client: Nathan Johnson

Faculty Advisor: Phillip Jones

Team Members:

Nathan Mazarelo — *Weekly Reporter/Software Developer*

Monte Friestad — *Spokesperson/Software Developer*

Madeline Rogers — *Meeting Facilitator/Hardware Maintainer*

Ryan Hansen — *Scribe/Hardware Maintainer*

Weekly Summary

This week our team continued testing the pressure sensors and interfacing with the Arduino. In the data analysis program, the plots containing the angle calculations were completed and work was started on creating plots for the pressure sensor data. In the web app, testing was done on UI framework by creating test cases.

Past Week Accomplishments

- Pressure Sensors and Arduino- Ryan
 - Testing Sensors and Arduino
 - Continued testing the pressure sensors with the Arduino. I found that the op amp required for this type of circuit is very specific for the low voltage application. I messaged the sensor manufacturer and they told me the MCP6004 I/P is really the only IC that works for our type of application.
 - Pending Issue
 - Developing code for the Arduino to take voltage readings and convert them into Newtons.

- Arduino interfacing, similar projects info- Maddie
 - Arduino interfacing
 - Made more progress with Arduino interfacing by looking into the language capabilities
 - Similar projects
 - Started to gather info from the additional resources I got from last week.

- Continued work on data analysis program – Nathan
 - Angles
 - Finished creating the subplot to hold the calculation of angles over time
 - Started to add multiple calculations on the chart to view at once
 - Pressure sensor
 - Started to create plots to hold the pressure sensor data to view along with angle calculations and the animation
 - Layout
 - Created a layout for the program that will maintain the subplots and allow for future subplots to be added without having to create a whole new plot

- Continued work on web application – Monte
 - UI Testing
 - Did more testing on the framework I made for the UI. To do this, I created some test that we can use for final testing.
 - Pending Issue
 - I encountered a bug where the app keeps crashing on opening during bug fixes that I have not yet been able to fix.

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Ryan Hansen	Continued testing pressure sensors with Arduino. Messaged the sensor manufacturer and found that that the MCP6004 I/P is really the only IC that works for our type of application.	7	105
Madeline Rogers	Made more progress with Arduino interfacing by looking into the language capabilities. Started to gather info from the additional resources I got from last week.	6	106
Nathan Mazarelo	Finished creating the angle subplot. Begin adding functionality for multiple angles in one graph. Made a layout to hold current subplots and future. Started to create subplot for the pressure sensor data.	7	111

Monte Friestad	Completed more testing on framework for UI. Created some tests that can be used for final testing.	7	106
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Plans for Coming Week

- Ryan
 - Still need to work on developing code for the Arduino to accurately take the voltage readings and convert them into Newtons, which I will likely need assistance with.
- Maddie
 - Start working more with Arduino language capabilities
- Nathan
 - Start testing current aspects of data analysis program for functionality
- Monte
 - Fix bug that I found, may involve going back in the versions. Additionally, I need to research the combination of Django and Matplotlib in order to find a solution we can use to combine Nathan and my sections.